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1BM19CS187

D2

Program 8-STUDENT ENROLLMENT DATABASE

Consider the following database of student enrollment in courses & books adopted for each course.

STUDENT (regno: string, name: string, major: string, bdate:date)

COURSE (course #:int, cname:string, dept:string)

ENROLL (regno:string, course#:int, sem:int, marks:int)

BOOK _ ADOPTION (course# :int, sem:int, book-ISBN:int)

TEXT (book-ISBN:int, book-title:string, publisher:string, author:string)

i. Create the above tables by properly specifying the primary keys and the foreign keys.

```
create database student_enroll;
```

```
use student_enroll;
```

```
create table student(
```

```
regno varchar(15),
```

```
name varchar(20),
```

```
major varchar(20),
```

```
bdate date,
```

```
primary key(regno));
```

```
desc student;
```

```
create table course(  
  courseno int,  
  cname varchar(20),  
  dept varchar(20),  
  primary key(courseno));  
desc course;
```

```
create table enroll(  
  regno varchar(15),  
  courseno int,  
  sem int,  
  marks int,  
  primary key(regno,courseno),  
  foreign key(regno) references student(regno),  
  foreign key(courseno) references course(courseno));  
desc enroll;
```

```
create table textbook(  
  book_isbn int,  
  book_title varchar(20),  
  publisher varchar(20),  
  author varchar(20),  
  primary key(book_isbn));  
desc textbook;
```

```
create table book_adoption(  
  courseno int,  
  sem int,  
  book_isbn int,
```

```

primary key(courseno,book_isbn),
foreign key(courseno) references course(courseno),
foreign key(book_isbn) references textbook(book_isbn));
desc book_adoption;

```

ii. Enter at least five tuples for each relation.

```

insert into student values('1BM11CS001','A','Sr','19931230');
insert into student values('1BM11CS002','B','Sr','19930924');
insert into student values('1BM11CS003','C','Sr','19931127');
insert into student values('1BM11CS004','D','Sr','19930413');
insert into student values('1BM11CS005','E','Jr','19940824');
commit;
select * from student;

```

	regno	name	major	bdate
▶	1BM11CS001	A	Sr	1993-12-30
	1BM11CS002	B	Sr	1993-09-24
	1BM11CS003	C	Sr	1993-11-27
	1BM11CS004	D	Sr	1993-04-13
	1BM11CS005	E	Jr	1994-08-24
*	NULL	NULL	NULL	NULL

```

insert into course values(111,'OS','CSE');
insert into course values(112,'EC','ECE');
insert into course values(113,'SS','ISE');
insert into course values(114,'DBMS','CSE');
insert into course values(115,'SIGNALS','ECE');
commit;
select * from course;

```

	courseno	cname	dept
▶	111	OS	CSE
	112	EC	ECE
	113	SS	ISE
	114	DBMS	CSE
	115	SIGNALS	ECE
*	NULL	NULL	NULL

```

insert into textbook values(10,'DATABASE SYSTEMS','PEARSON','SCHIELD');
insert into textbook values(900,'OPERATING SYSTEMS','PEARSON','LELAND');
insert into textbook values(901,'CIRCUITS','HALL INDIA','BOB');
insert into textbook values(902,'SYSTEM SOFTWARE','PETERSON','JACOB');
insert into textbook values(903,'SCHEDULING','PEARSON','PATIL');
insert into textbook values(904,'DATABASE SYSTEMS','PEARSON','JACOB');
insert into textbook values(905,'DATABASE MANAGER','PEARSON','BOB');
insert into textbook values(906,'SIGNALS','HALL INDIA','SUMIT');

commit;

select * from textbook;

```

	book_isbn	book_title	publisher	author
▶	10	DATABASE SYSTEMS	PEARSON	SCHIELD
	900	OPERATING SYSTEMS	PEARSON	LELAND
	901	CIRCUITS	HALL INDIA	BOB
	902	SYSTEM SOFTWARE	PETERSON	JACOB
	903	SCHEDULING	PEARSON	PATIL
	904	DATABASE SYSTEMS	PEARSON	JACOB
	905	DATABASE MANAGER	PEARSON	BOB
	906	SIGNALS	HALL INDIA	SUMIT
•	NULL	NULL	NULL	NULL

```

insert into enroll values('1BM11CS001',115,3,100);
insert into enroll values('1BM11CS002',114,5,100);
insert into enroll values('1BM11CS003',113,5,100);
insert into enroll values('1BM11CS004',111,5,100);
insert into enroll values('1BM11CS005',112,3,100);

commit;

select * from enroll;

```

	regno	courseno	sem	marks
▶	1BM11CS001	115	3	100
	1BM11CS002	114	5	100
	1BM11CS003	113	5	100
	1BM11CS004	111	5	100
	1BM11CS005	112	3	100
•	NULL	NULL	NULL	NULL

```

insert into book_adoption values(111,5,900);
insert into book_adoption values(111,5,903);
insert into book_adoption values(111,5,904);
insert into book_adoption values(112,3,901);
insert into book_adoption values(113,3,10);
insert into book_adoption values(114,5,905);
insert into book_adoption values(113,5,902);
insert into book_adoption values(115,3,906);

commit;

select * from book_adoption;

```

	courseno	sem	book_jsbn
▶	111	5	900
	111	5	903
	111	5	904
	112	3	901
	113	3	10
	113	5	902
	114	5	905
	115	3	906
•	NULL	NULL	NULL

iii. Demonstrate how you add a new text book to the database and make this book be adopted by some department.

```

insert into textbook values(908,'UNIX CONCEPTS','TATA MCGRAW HILL','SUMITABHA DAS');

insert into book_adoption values(113,4,908);

select * from textbook;

select * from book_adoption;

```

	book_jsbn	book_title	publisher	author
▶	10	DATABASE SYSTEMS	PEARSON	SCHIELD
	900	OPERATING SYSTEMS	PEARSON	LELAND
	901	CIRCUITS	HALL INDIA	BOB
	902	SYSTEM SOFTWARE	PETERSON	JACOB
	903	SCHEDULING	PEARSON	PATIL
	904	DATABASE SYSTEMS	PEARSON	JACOB
	905	DATABASE MANAGER	PEARSON	BOB
	906	SIGNALS	HALL INDIA	SUMIT
	908	UNIX CONCEPTS	TATA MCGRAW HILL	SUMITABHA DAS
•	NULL	NULL	NULL	NULL

	courseno	sem	book_isbn
▶	111	5	900
	111	5	903
	111	5	904
	112	3	901
	113	3	10
	113	5	902
	113	4	908
	114	5	905
	115	3	906
•	NULL	NULL	NULL

iv. Produce a list of text books (include Course #, Book-ISBN, Book-title) in the alphabetical order for courses offered by the 'CS' department that use more than two books.

```
select c.courseno,t.book_isbn,t.book_title
from course c,book_adoption ba,textbook t
where c.courseno=ba.courseno
and ba.book_isbn=t.book_isbn
and c.dept='CSE'
and 2<(select COUNT(book_isbn)
from book_adoption b
where c.courseno=b.courseno)
order by t.book_title;
```

	courseno	book_isbn	book_title
▶	111	904	DATABASE SYSTEMS
	111	900	OPERATING SYSTEMS
	111	903	SCHEDULING

v. List any department that has all its adopted books published by a specific publisher.

```
select distinct c.dept
from course c
where c.dept in(select c.dept
```

```
from course c,book_adoption b,textbook t
where c.courseno=b.courseno
and t.book_isbn=b.book_isbn
and t.publisher='PEARSON')
and c.dept not in(select c.dept
from course c,book_adoption b,textbook t
where c.courseno=b.courseno
and t.book_isbn=b.book_isbn
and t.publisher != 'PEARSON');
```

	dept
▶	CSE